

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2004/000383

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. 7: C12Q 1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
SEE BELOW

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
SEE BELOW

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
WPIDS, BIOSIS, MEDLINE, CAPLUS: Suppression subtractive hybridisation/hybridization, angiogen?, time/stage

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	WO 2003/027285 A1 (Bionomics Ltd) 3 April 2003 Example 3	1, 2, 5, 6
X	WO 1996/023079 A2 (Clontech Laboratories Inc) 1 August 1996 p. 17 line 11 - p. 18 line 21	1, 2, 5, 6
X	Diatchenko, L. et al., 1996, Suppression subtractive hybridization: a method for generating differentially regulated or tissue specific cDNA probes and libraries, <i>Proceedings of the National Academy of Sciences USA</i> , 93:6025-6030 Whole document	1, 2, 5, 6

☒ Further documents are listed in the continuation of Box C

☒ See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
8 July 2004

Date of mailing of the international search report
14 JUL 2004

Name and mailing address of the ISA/AU
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/000383

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>Glienke, J. et al., 2000, Differential gene expression by endothelial cells in distinct angiogenic states, <i>European Journal of Biochemistry</i>, 267:2820-2830.</p> <p>Whole document</p>	1, 2, 5, 6

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/000383

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 3, 4, 7-9
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

See Supplemental Box
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See Supplemental Box

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-9

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/000383

Supplemental Box

Continuation of Box No II (Observations where certain claims were found unsearchable):

Claims 3, 4, 7-9 are not limited to the technical features of the invention because the claims are not limited to nucleic acid molecules or polypeptides that could only have been produced using the applicant's invention.

The applicant's invention resides in a method for the identification of a nucleic acid molecule differentially expressed in an *in vitro* model of a biological system by performing suppression subtractive hybridisation on cDNA pools from distinct time points sequentially so as to amplify cDNAs derived from nucleic acid molecules differentially expressed from one time point to the next.

Claims 3, 4, 7-9 define a nucleic acid molecule *when identified* by the method of the invention, and the polypeptide encoded by these nucleic acid molecules. However, a method of identification does not produce a product, it merely provides new information about a pre-existing compound. As such the claim simply defines a compound *per se*, not a product of the applicant's invention, hence the claims are not limited to the technical features of the invention.

Continuation of Box No III (Observations where unity of invention is lacking):

The International Searching Authority has found that there are different inventions as follows:

Invention 1: Claims 1-9 (completely) relating to a method for the identification of a nucleic acid molecule differentially expressed in an *in vitro* model of a biological system, comprising the step of performing a suppression subtractive hybridisation using cDNA isolated at different time points, wherein the cDNA pools from the different time points are subtracted sequentially so as to progressively amplify the nucleic acid molecules differentially expressed from one time period to the next.

Inventions 2-45: Claims 10, 17-21, 27, 34, 36, 54, 56, 76, 78, 109-115 (completely), and 11-16, 22-26, 28-33, 35, 37-53, 55, 57-75, 77, 79-108, 116-136 (partially). These claims relate to a nucleic acid molecule comprising the sequence set forth in one of SEQ ID NO: 1-44, the encoded polypeptide, antibodies reactive with the isolated polypeptide, siRNA/DNAzymes and ribozymes that target to SEQ ID NO: 1-44, and various methods that make use of said nucleic acid molecules and/or polypeptides, antagonists or agonists of said nucleic acid molecules or antibodies that bind the encoded polypeptide.

Each of the 44 genes set forth in SEQ ID NO:1-44 represent a distinct invention.

Inventions 46-516: Claims 11-16, 22-26, 28-33, 35, 37-53, 55, 57-75, 77, 79-108, 116-136 (partially) with respect to each of the 471 additional genes set forth in Tables 1 and 2, and methods that make use of said nucleic acid molecules and/or polypeptides, antagonists or agonists of said nucleic acid molecules or antibodies that bind the encoded polypeptide.

Each of the 471 genes set forth in Tables 1 and 2 is considered a distinct invention.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2004/000383

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
WO 1996/023079		AU 47741/96	EP 0753075	US	5565340
		US 5759822			
WO 2003/027285		CA 2461372	EP 1430126		
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.					
END OF ANNEX					